

CLAIMS:

What is claimed is:

1. A sorption element (1) for a sorption-supported air conditioning unit for heating and/or cooling and/or dehumidification of a room or an airflow, characterized in that the sorption element (1) is arranged as a tubular piece with a tubular cross section (16) with a first (11) and an opposing second (12) open end whose first open end (11) is delimited with a first air-permeable grid element (13) and whose second open end (12) is delimited with a second air-permeable grid element (14), with the grid elements (13, 14) being impermeable for a sorption agent (3).
2. A sorption element (1) according to claim 1, characterized in that the sorption element (1) has a substantially circular cross section.
3. A sorption element (1) according to claim 1, characterized in that the sorption element (1) has a substantially polygonal, especially rectangular, cross section.
4. A sorption element (1) according to one of the claims 1 to 3, characterized in that the first open end (11) and/or the second open end (12) is smaller than the tubular cross section (16).
5. A sorption element (1) according to one of the claims 1 to 4, characterized in that a maintenance opening (17) is provided through which the sorption agent (3) can be introduced into the sorption element (1) and/or can be exchanged.
6. A sorption element (1) according to one of the claims 1 to 5, characterized in that the sorption agent (3) comprises silica gel, a hygroscopic salt, especially

LiCl or LiBr, a molecular sieve or a hygroscopic metal oxide, especially Al_2O_3 , or a combination of the aforementioned.

7. A sorption element (1) according to one of the claims 5 or 6, characterized in that the sorption agent (3) is arranged as a loose fill.
8. A sorption element (1) according to one of the claims 5 to 7, characterized in that in the case of a substantially perpendicular configuration of the sorption element (1) the sorption agent (3) is filled up to a height (31) which is lower than the length (15) of the sorption element (1).
9. A sorption element (1) according to claim 8, characterized in that the sorption agent (3) can be fluidized/swirled by an airflow, especially coming from below.
10. A sorption system (2) for a sorption-supported air conditioning unit for dehumidifying and/or heating and/or cooling a room or an airflow, characterized in that it comprises at least two substantially parallel extending sorption elements (1) according to one of the claims 1 to 9.
11. A sorption system (2) according to claim 10, characterized in that it is rotatable about an axis substantially parallel to the longitudinal axis of the sorption system (2) and/or is movable normal to its longitudinal direction.
12. A method for a sorption-supported air conditioning unit for dehumidifying and/or heating and/or cooling a room or an airflow with a sorption element (1) according to one of the claims 1 to 9, optionally with a sorption system (2) according to claim 10 or 11, characterized in that in a conditioning cycle the airflow to be conditioned is guided through at least one of the sorption elements (1), with the airflow to be conditioned being dehumidified.

13. A method according to claim 12, characterized in that after reaching a predetermined degree of saturation of the sorption agent (3) in a regeneration cycle, a regeneration airflow, especially heated air, is guided through the at least one sorption element (1), and the conditioning cycle is started again after regeneration.
14. A method according to claim 13, characterized in that two or more sorption elements (1) perform conditioning and regeneration cycles in a time-staggered manner with respect to each other.